ABSTRACT

The usage of compounds that improve fetal and neonatal outcome of preterm birth is described. These compounds are scavengers of ROS, their precursors, and agents that induce production of the scavengers. Examples of these compounds are glutathione, NAC, antioxidants, and spin trapping compounds. These compounds improve fetal outcome by inhibiting a fetal inflammatory process that may affect the fetus independently of prematurity. This fetal inflammatory response is characterized by increased cytokine and matrix metalloproteases (MMP) levels both in the mother and fetus and may be modulated by ROS at different levels. Targeting ROS formation with compounds such as specific antioxidants, glutathione or spin trapping compounds, their precursors, and/or agents which induce their production will suppress both the direct effects of ROS and its indirect effects through cytokines and MMPs already circulating in the system. This therapeutical intervention would limit the pathophysiologoical chain of events that ultimately leads to PPROM, preterm birth and/or adverse fetal and neonatal outcome.